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NEXT GENERATION PRODUCTS

Flavour bans on EVP likely to increase smoking-related harm:

Results from a UK Dynamic Population Model

Thomas Verron,
Mengran Guo, Xavier Cahours, Libby Clarke, Thomas Nahde

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Context

Electronic Vaping Products have been widely recognized as a potentially less harmful alternatives to cigarettes*

EVP continues to be a topic of intense debate among public health authorities, policymakers, and researchers

What will be the impacts of a potential e-liquid flavours ban in terms of public health ?

Impact assessment relies on metrics such as mortality rates, morbidity levels, and associated cost of outcomes.

** Fearon I M, Stevenson M, Nahde T (August 01, 2025) Flavoured Vaping Products in Tobacco Harm Reduction: A Regulatory Perspective. Cureus 17(8): e89196. doi:10.7759/cureus.89196*

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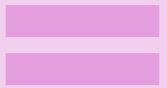
Context

What will be the impacts of a potential e-liquid flavours ban in terms of public health?

To resolve this equation to predict the health impact of flavours ban, we propose to use a dynamic population modeling (DPM) approach.

EVP

Flavors' Ban



Health Impact

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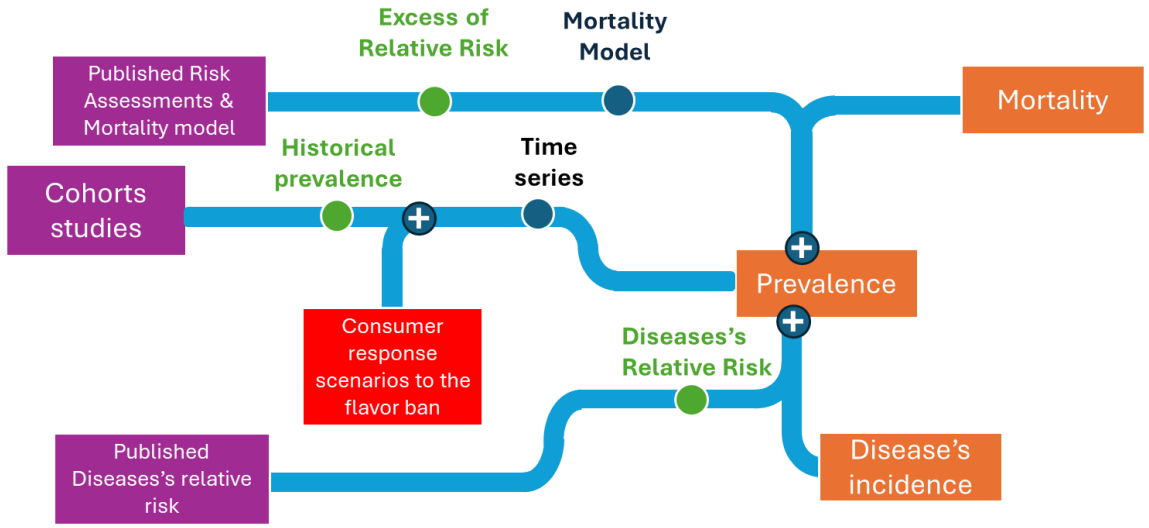
What is a DPM ?

A dynamic population model is a simulation model that tracks how a population evolves over time based on individual behaviors, transitions, and external influences such as product use or policy changes.

"COMPUTE" Task Force



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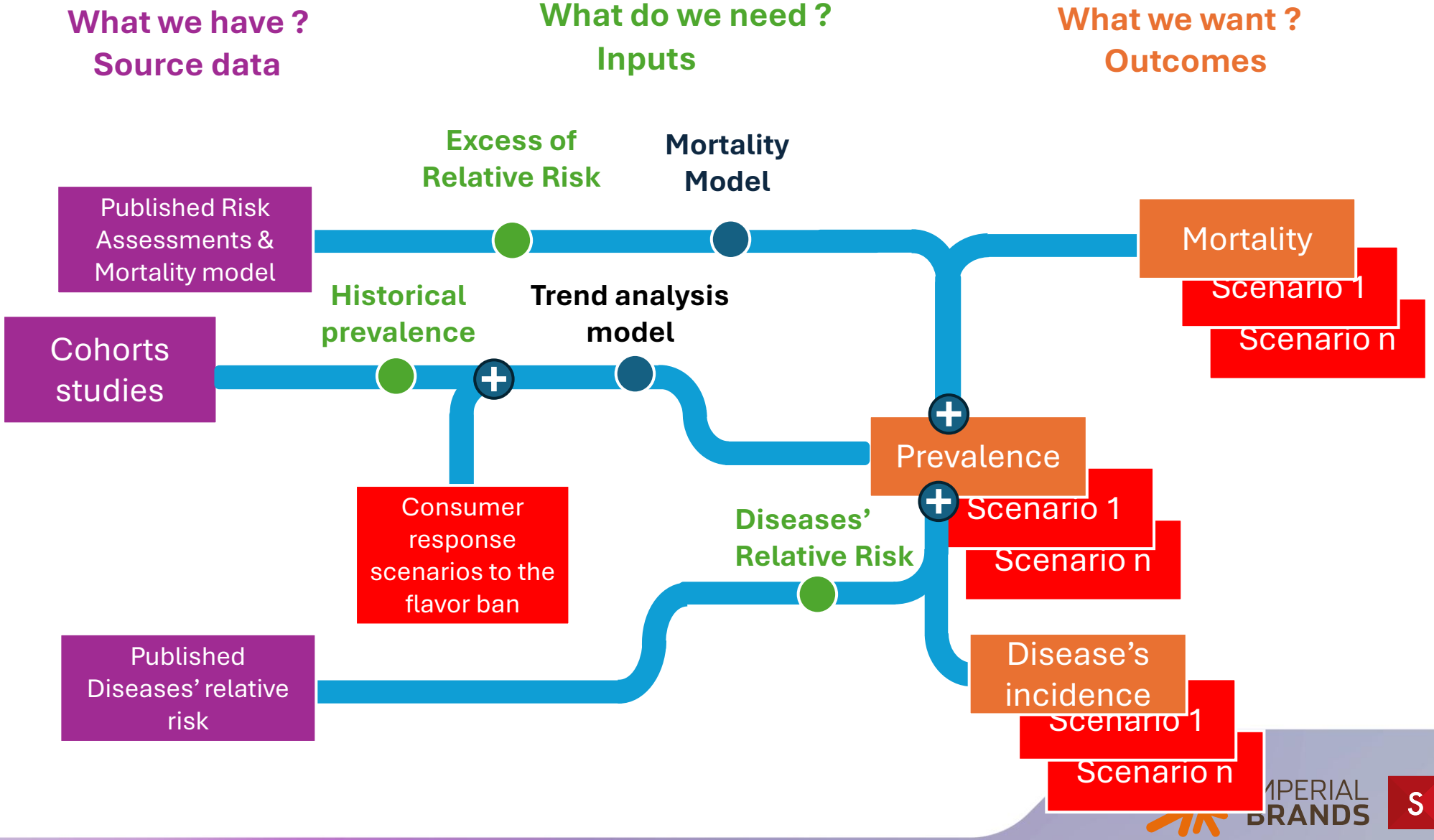
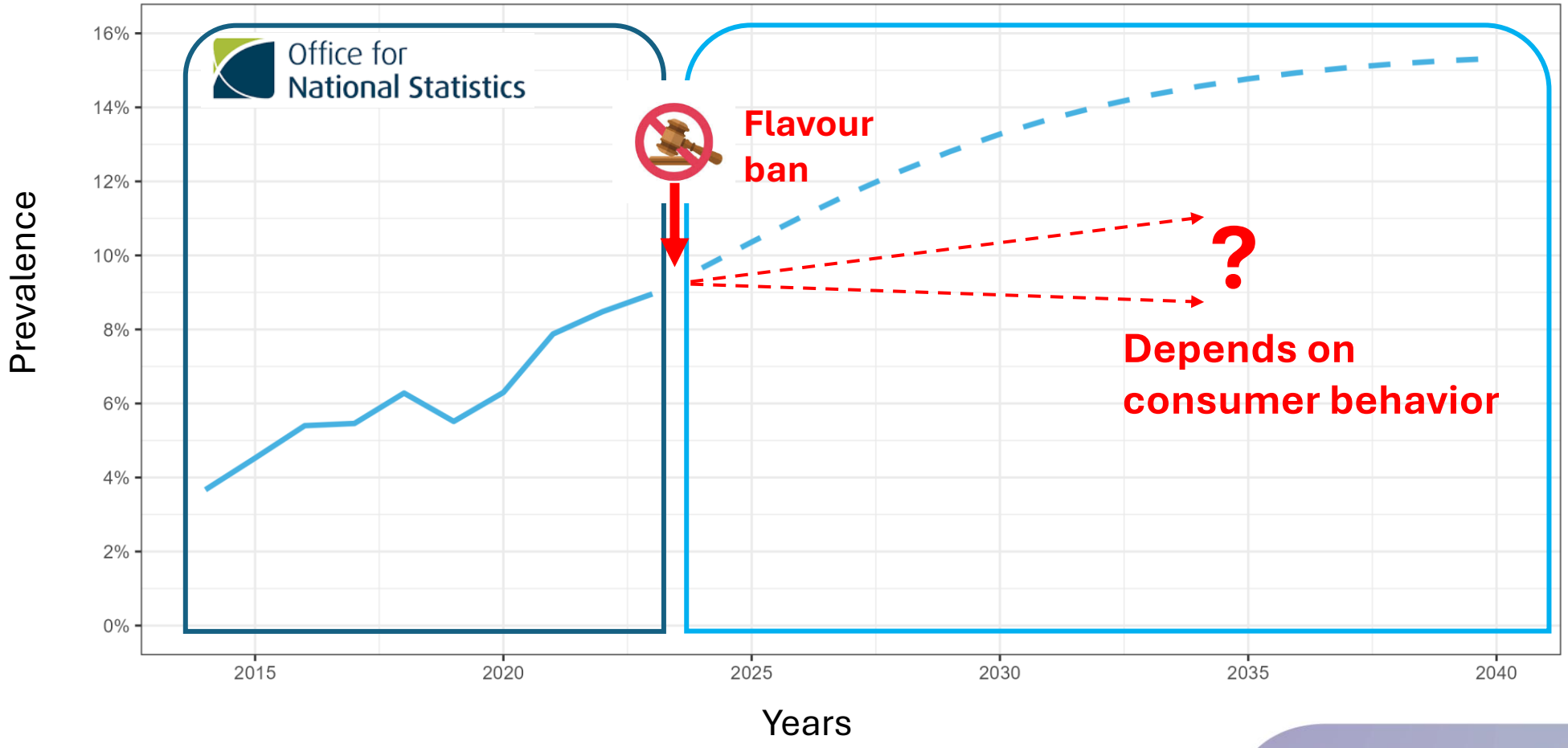
What we need ?


What we have ?
Source data
What do we need ?
Inputs
What we want ?
Outcomes
Excess of Relative Risk
Mortality Model
Published Risk Assessments & Mortality model
Historical prevalence
Trend analysis model
Cohorts studies
Consumer response scenarios to the flavor ban
Diseases' Relative Risk
Published Diseases' relative risk
Mortality
Scenario 1
Scenario n
Prevalence
Scenario 1
Scenario n
Disease's incidence
Scenario 1
Scenario n

Trend analysis model

Prevalence and projection of EVP current users



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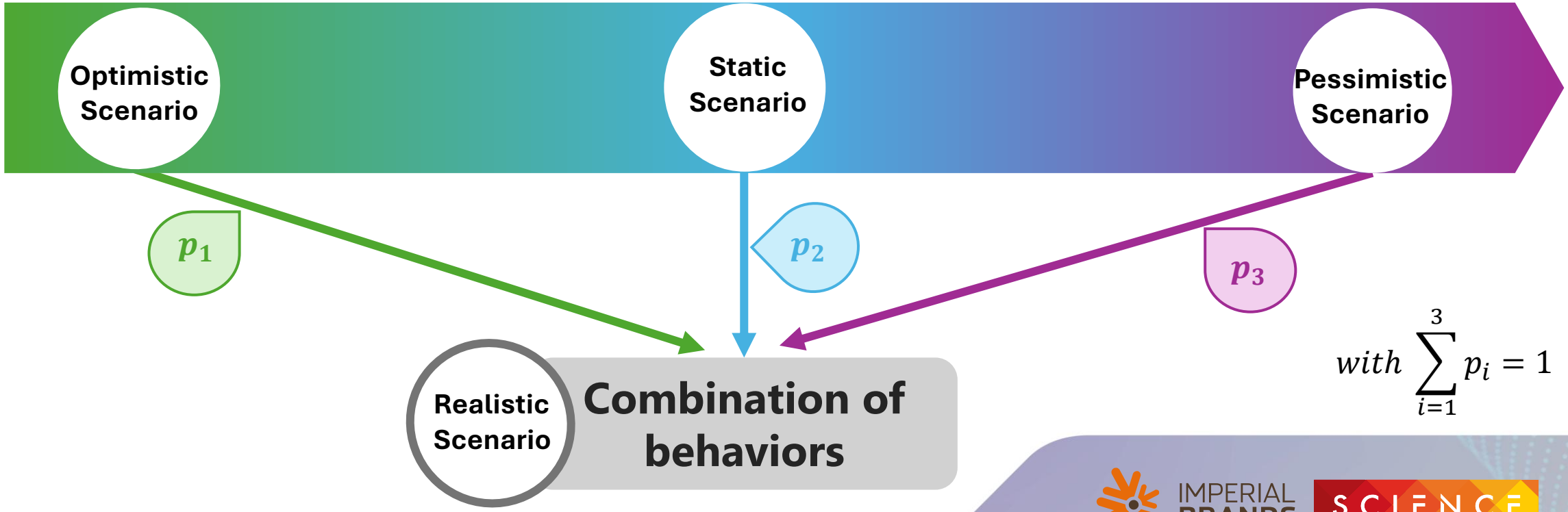
Conceptual Scenarios

How would Flavored EVP users* likely behave if a flavor ban were implemented?

Quit vaping

Switch to non-flavored EVP

Switch to cigarettes



$$with \sum_{i=1}^{3} p_i = 1$$

*About 70% of vapers used flavored e-liquid according to ASH Smokefree GB Adult Surveys 2023

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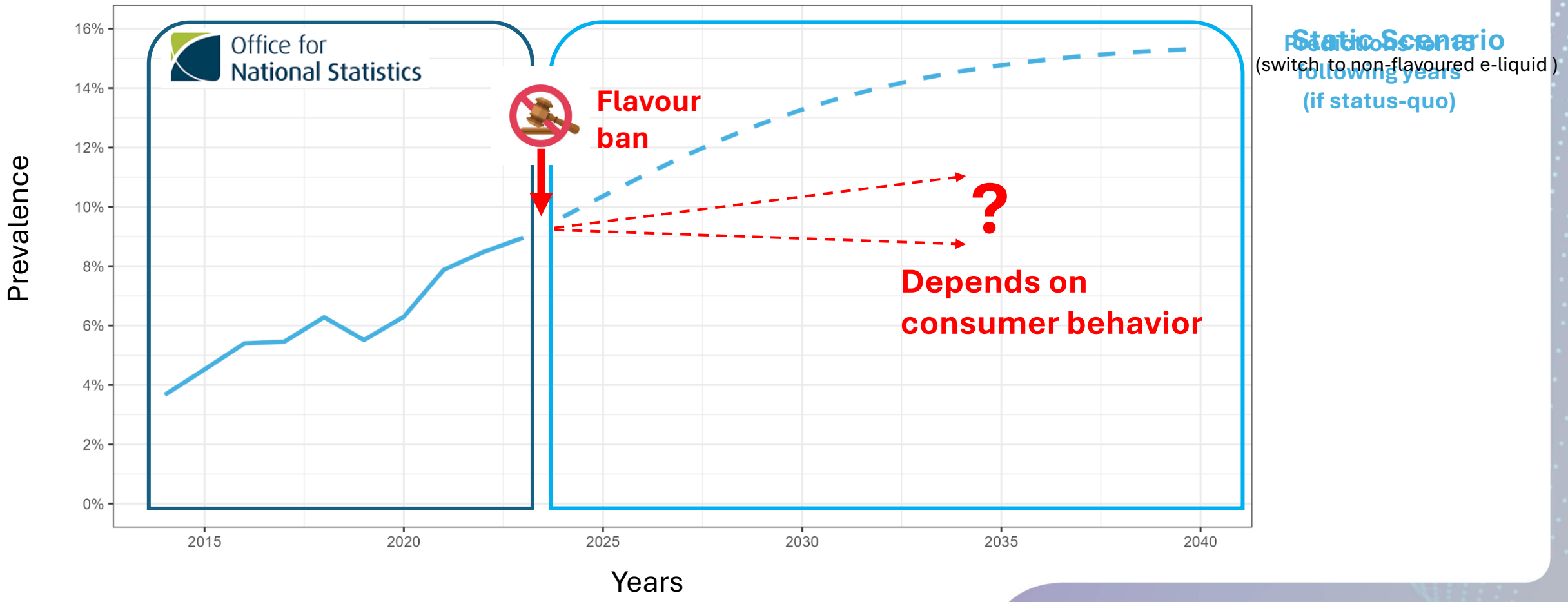
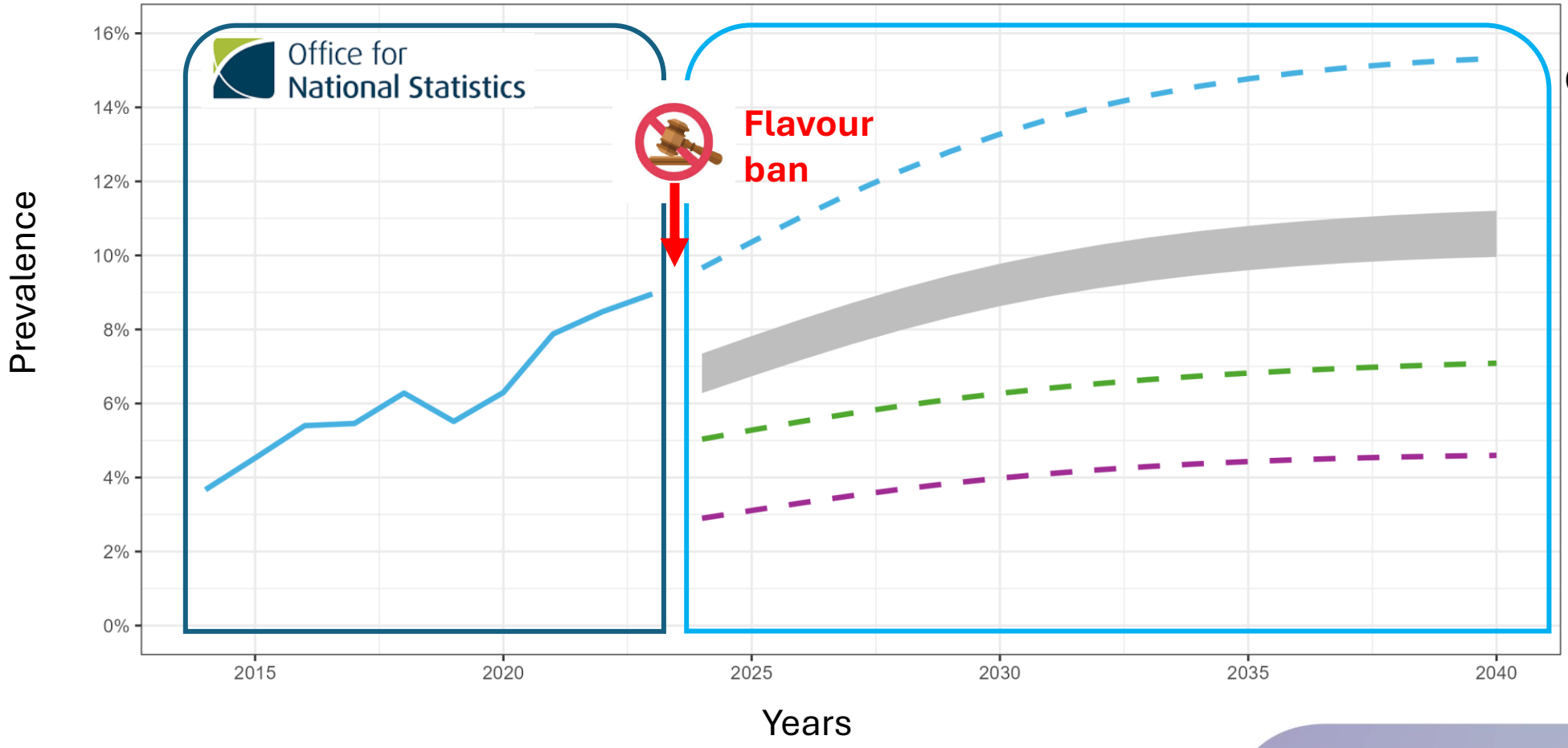
Trend analysis model

Prevalence and projection of EVP current users



Trend analysis model

Prevalence and projection of EVP Current users



Static Scenario
(switch to non-flavoured e-liquid)

Realistic Scenario

Optimistic Scenario
(stop vaping)

Pessimistic Scenario
(switch to cigarettes)

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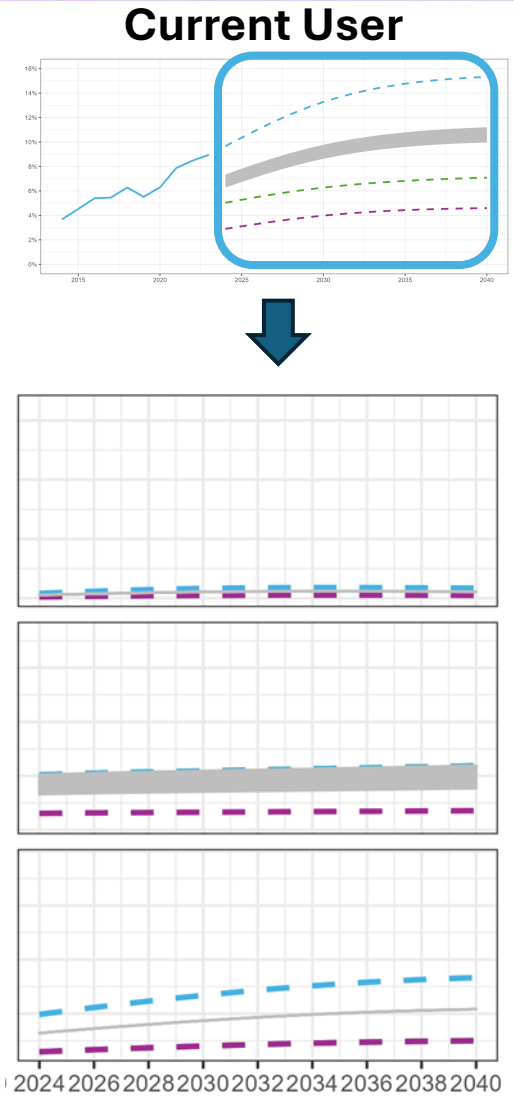
Trend analysis model for all status

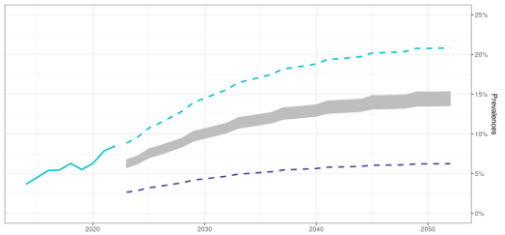
Prevalence and projection of EVP Current User per smoking status



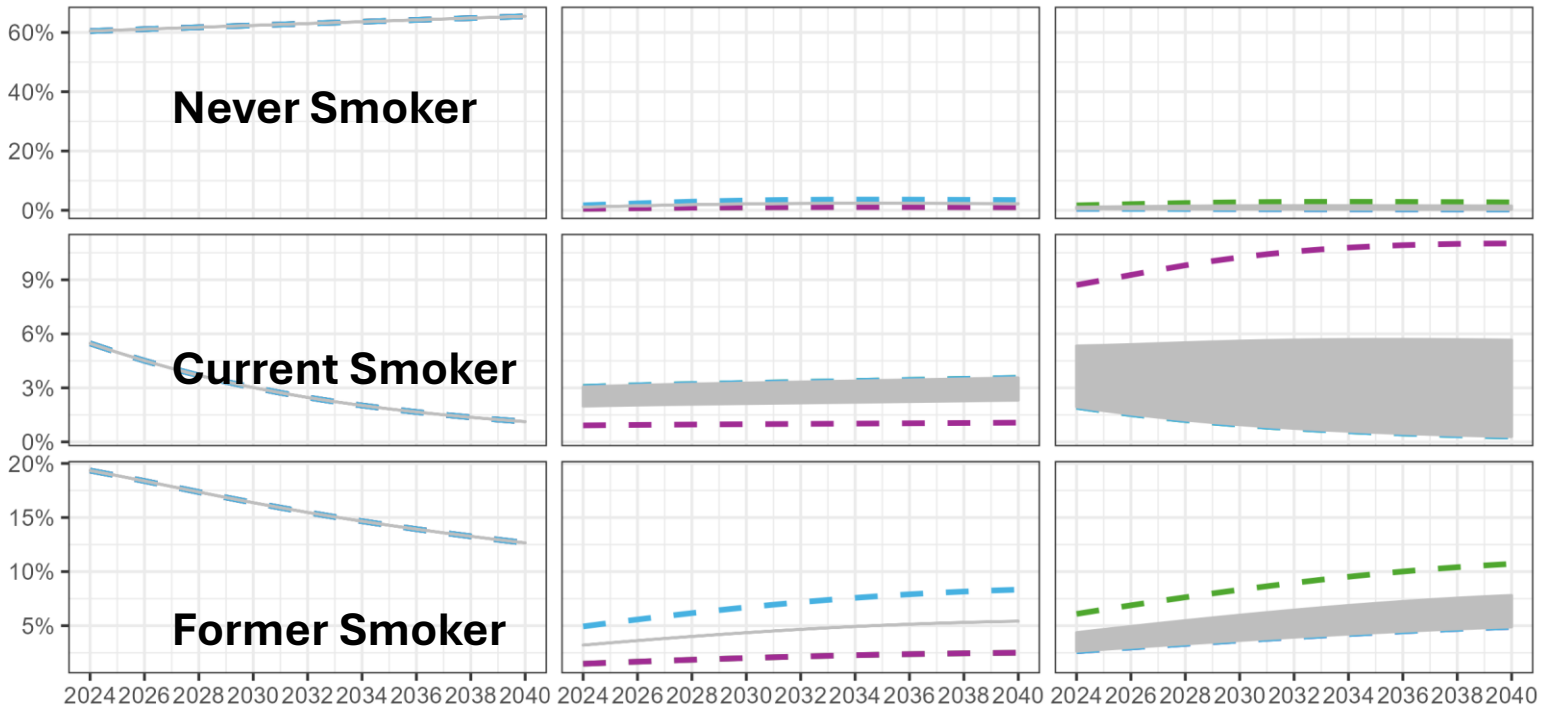
Trend analysis model for all status

Never EVP User

Current EVP user



Former EVP User



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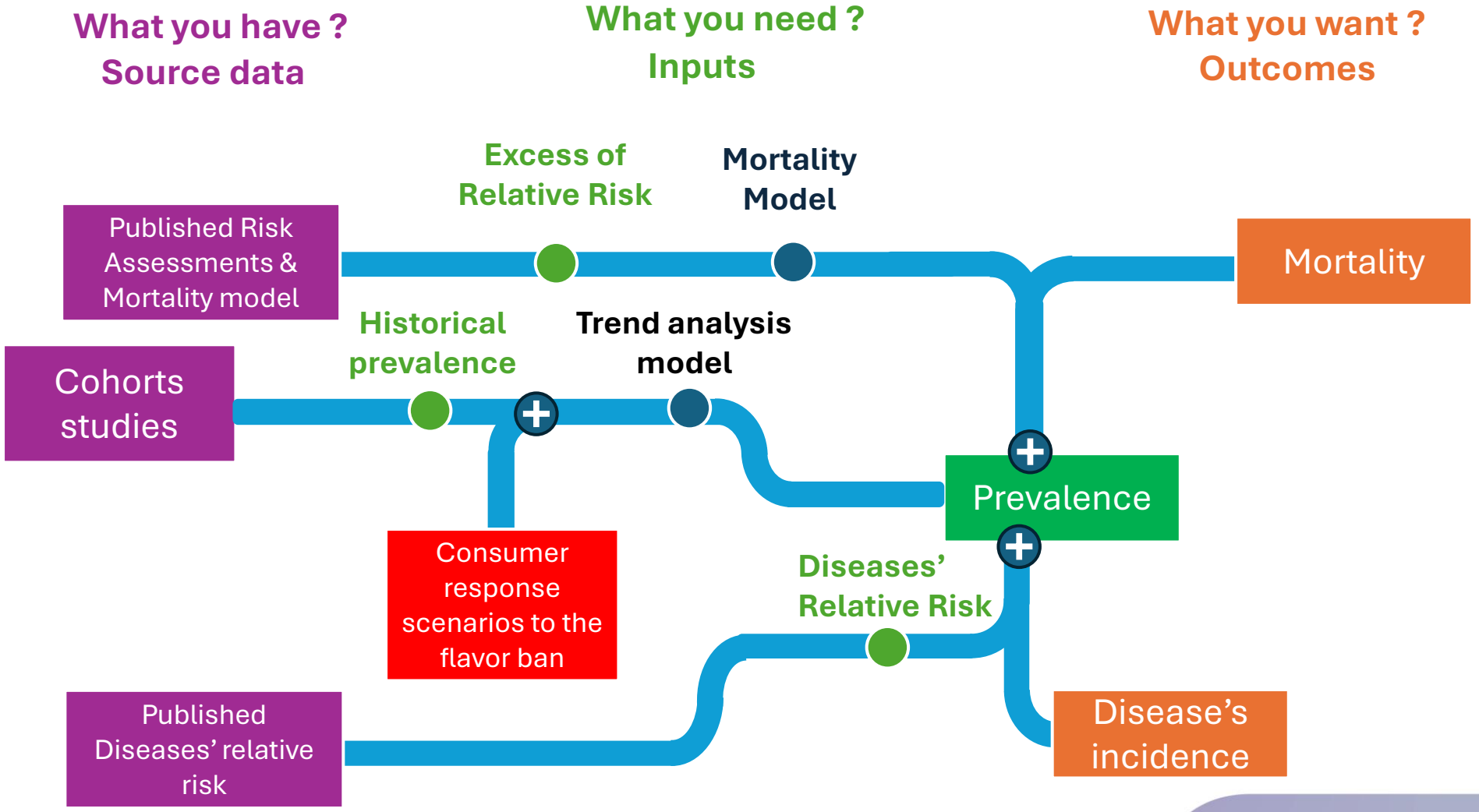
Next step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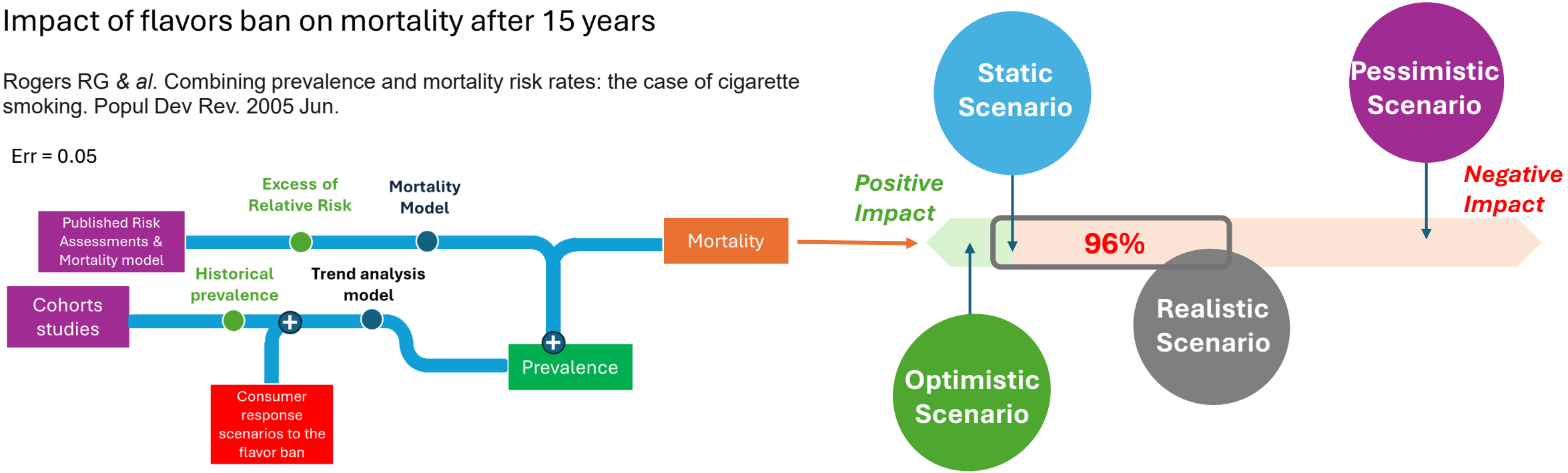
Comparative analysis – Global Mortality Rate

Impact of flavors ban on mortality after 15 years

Rogers RG *& al*. Combining prevalence and mortality risk rates: the case of cigarette smoking. Popul Dev Rev. 2005 Jun.



In the optimistic scenario, a decrease in mortality of **-0.05%** is expected over the next 15 years.

Under the pessimistic scenario, an increase in mortality of **+1.1%** is expected over the next 15 years.

In realistic scenario, there is a high probability of adverse effects on mortality, with **96%** of realistic scenarios indicating a potential increase in mortality rates

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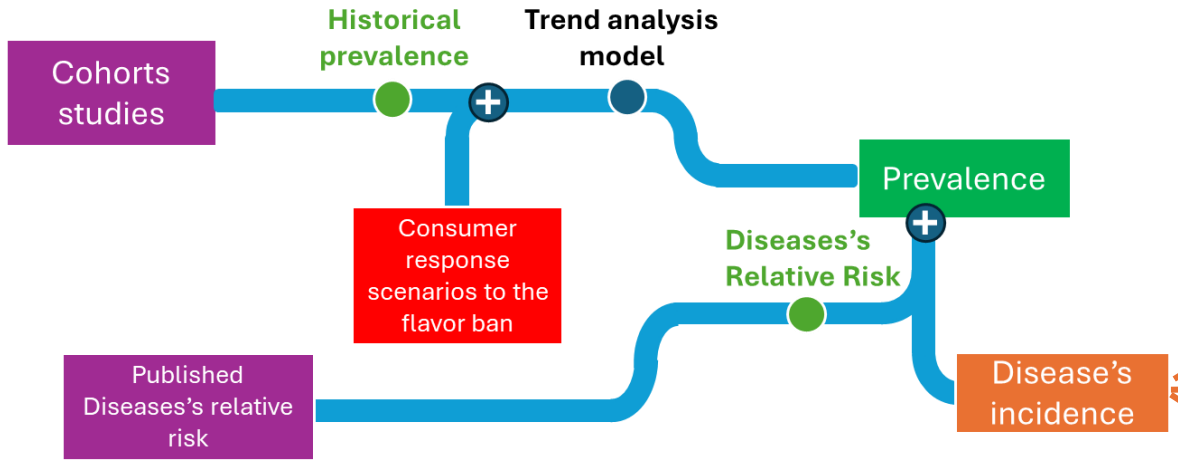
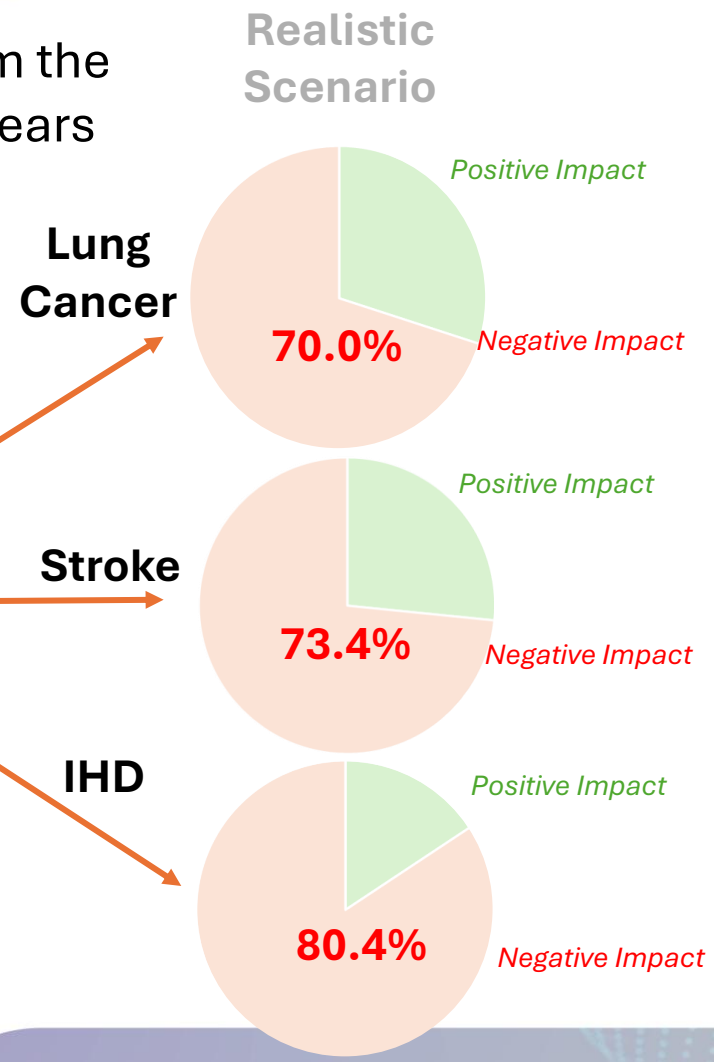
Comparative analysis – smoking related disease

Probabilities of an increase in tsmoking-related diseases resulting from the implementation of a flavour ban, based on realistic scenario after 15 years





Lee PN & al. Estimating the effect of differing assumptions on the population health impact of introducing a Reduced Risk Tobacco Product in the USA. Regul Toxicol Pharmacol. 2017 Aug

In approximately **75%** of cases, the flavour ban could result in an increased frequency of major smoking-related diseases associated with smoking consumption.

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Conclusion

A UK-focused dynamic population model was used to estimate the impact of a flavored vape ban, using different behavioral scenarios

- **Key Findings**:
  - In 96% of projections, a flavor ban was associated with worsened cumulative mortality.
  - Only 4% of projections showed a potential improvement compared to the status quo.
  - Regarding major smoking-related diseases:
    - A small number of projections suggested a reduction in disease risk.
    - However, in ~75% of scenarios, the relative risk of developing a disease increased under a flavor ban.

The modeling suggests that a flavor ban may pose significant public health risks under most realistic conditions.

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Key Considerations

- The model is based solely on the adult population, excluding the impact on younger populations, who may experience different patterns of tobacco product use and health outcomes.

- The model is applied using UK market data, meaning that its findings may not be directly applicable to other countries or regions with different tobacco use behaviors, regulatory environments, and public health dynamics.

- The predictions made by the model do not account for other potential future factors that could influence smoking prevalence. **It specifically examines the effects of flavours ban, assuming all other variables remain constant**.

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